

REMARKS

Further consideration of this application is solicited. Claims 5-14 are pending herein. The Office Action of March 19, 2008, has been carefully considered. Notwithstanding distinguishing amendments made February 4, 2008, the Examiner states in his March 19, 2008 Office Action: "upon further inspection of Figure 1 (of Gat), the spray nozzle (19) shows an unnumbered bottom hole which appears to have a different orientation than the other holes. One of ordinary skill in the art would recognize the orientation as being such that the gas will discharge tangentially or circumferentially." However, as explained below, Gat teaches away from this theory in the description of spray nozzle (19): "evenly distributing the gas across the surface of the wafers" and not tangentially or circumferentially. The Examiner is commenting at one bottom hole of Gat, Fig. 1. As described below, the claims as previously amended recite "each hole" so faces. Consequently, as will further be discussed below, there exist a number of distinguishing features which meet the *KSR v. Teleflex* guidelines for non-obviousness. By this Amendment, claims 5 and 8 have been amended to further distinguish over Gatt as further described below, both structurally and functionally.

Applicants appreciate the Examiner's grant of a telephonic interview that transpired on April 28, 2008. A proposed amendment to claim 5 was discussed. At the conclusion of the interview, the Examiner states: "the Examiner will seek input from TQAS & RQAS when interpreting the proposed claim language." For consideration of TQAS/RQAS and the Examiner, Applicants incorporate the remarks stated in their response filed February 4, 2008, herein by reference and below summarize some of the distinguishing features of the further amended, independent claims 5 and 8 as follows:

1. Gat teaches at page 5, ll. 48-57: "Spray nozzle 19 is for evenly distributing the gas *across the surface of the wafers*." To the contrary, Saito (the present application, hereinafter, Saito) teaches at page 10: "When the cooling gas is blown out in the *tangential* direction in order *not to directly come into contact with the wafers* w, local cooling of the wafers w and scattering

of particles can be prevented.” Consequently, there is an intended difference in direction of cooling gas between the prior art Gat and Saito. Gat appears to depict spirally and vertically dispersed blow holes of nozzle 19 which blow cooling gas “across the surface of the wafers” while Saito clearly teaches a tangential (circumferential) direction so the cooling gas does “not directly come into contact with the wafers w.” The “not coming directly into contact” feature is now specifically recited in claim 8 as amended. “Circumferentially” and “tangential direction” are recited in both claims 5 and 8. Moreover, Applicants state an advantage of such a structure: “local cooling of the wafers . . . and scattering of particles can be prevented.” Clearly, a structure such as Gat encourages local cooling and particle scattering. M.P.E.P Section 707.07(f) requires a reason for an Examiner position answering an asserted advantage as applicants assert in their specification.

2. Gat does not teach that “each blowing hole is formed at a pipe wall of the cooling-gas introducing pipe to face in the same circumferential direction of the processing container,” (both claims 5 and 8.) As can be seen by Gat’s FIG. 1, one of ordinary skill in the art would recognize that Gat’s blowing holes are directed in different directions “across the surface of the wafers,” again, per Gat page 5, ll. 48-57. Again, the Gat holes appear to be spirally dispersed about nozzle 19, facing in different directions. Applicants believe that Gat actually shows a top hole facing toward one side of a top wafer and a bottom hole facing the opposite side of a bottom wafer. Claim 8, as amended, recites: “comprising a plurality of blowing holes arranged vertically above one another along the pipe” not disclosed or suggested by Gat.

3. Gat does not teach or suggest: “the plurality of blowing holes for *uniformly* cooling said objects.” Gat appears to show a non-uniform cooling. If the top Gat hole blows in one direction, the middle holes other directions and the bottom hole, yet another, Gat cannot uniformly cool by the gas movement. An advantage of claims 5 and 8 as amended is uniform cooling.

4. Gat does not teach or suggest: “for blowing a *slewing flow* of the cooling gas *circumferentially about the circular space*,” as supported at page 10, lines 24-26. Slewing is defined as a large amount. “Large amount” is also supported at page 12, lines 29-33. Gat blows gas in different directions and so Gat fails to disclose or suggest “a slewing flow of the cooling gas circumferentially about the circular space.” It appears as if Gat has one hole at the top that may blow gas in a direction toward one side of a top wafer and a hole at the bottom that may blow gas toward the opposite side of the bottom wafer. All other holes clearly blow gas directly at the wafers. Gat does not blow “a slewing flow . . . about the circular space” where the circular space is defined in claims 5 and 8 as “formed between the processing container and the plurality of objects to be processed.”

5. Gat does not teach “the plurality of blowing holes is formed at suitable intervals in the *vertical* direction of the cooling-gas introducing pipe” as per claim 5 or “comprising a plurality of blowing holes arranged *vertically above one another* along the pipe” as per claim 8. As indicated above, Gat appears to show holes spirally around nozzle 19 and not “vertical direction” or “vertically above one another.”

During a personal interview of January 22, 2008, the orientation of the blow holes in Gat’s cooling pipe nozzle 19 was compared with that of the blow holes 26 in Applicants’ cooling gas pipe 28. The undersigned emphasized that each of blow holes 26 in Applicants’ Fig. 1 directly faces the reader. That is, each hole discharges gas outwardly in a direction perpendicular to the plane of the paper. Because Applicants’ processing unit is embodied in a cylindrical container, this means that the blow holes 26 face or open in the “circumferential” direction of the cylindrical container body 4 which forms the recited circular space with reference to the objects to be processed. Gas discharged from blow holes 26 thus moves circumferentially or “tangentially” along the interior cylindrical wall of the container body in the same direction about the circular space.

The independent claims have been previously amended in a way that further emphasize the structural differences with Gat, that is the alignment of the blow holes with respect to the walls of the container. Independent claims 5 and 8 have been amended to distinguish Applicants' structure from the blow holes of Gat's system, because Gat's holes all face inwardly toward the wafers 14 (Fig. 1). That is, contrary to Applicants' now claimed arrangement, Gat's blow holes face in the radial direction of Gat's container body. They appear to form a spiral and are not "vertical".

Although it is difficult to determine the exact orientation of some of the blow holes in Gat's nozzle 19 connected to pipe 18, particularly, the lower and upper holes, it is undisputably clear from Gat that each such hole does not open to discharge in the same circumferential direction, as Applicants' claims 5 and 8 now require.

Now, specific reference will be made to the stated rejections in the March 19, 2008 Office Action. Claims 5-14 stand rejected under 35 U.S.C. § 103(a) as purportedly obvious over Gat, or alternatively obvious over Gat in view of U. S. Patent 6,403,927 to Kato. These rejections are traversed. Gat fails to teach or suggest Applicants' cooling gas pipe structure as set forth in the claims and discussed above. The Kato patent does not remedy these deficiencies of Gat with respect to independent claims 5 or 8 as amended, or with respect to any of the several listed dependent claims. Hence, the rejections based upon alleged obviousness likewise are overcome and should be withdrawn.

In view of the foregoing amendments and remarks, it courteously is urged that all of the claims are allowable and that this application is in condition for allowance. Favorable action in this regard earnestly solicited.

If any other fees under 37 C.F.R. §§1.16 or 1.17 are due in connection with this filing, please charge the fees to Deposit Account No. 02-4300; Order No. 033082 M 277. The undersigned respectfully requests the Examiner to contact him at the telephone number indicated below in connection with TQAS/RQAS review to discuss claim construction. Applicants counsel

is agreeable to discussing alternative features or any issues raised during the review in order to reach agreement on allowable subject matter or place the claims in better form for appeal.

Respectfully submitted,
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